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Triazolyl-benzimidazolones and triazolyl-benzotriazoles: new potential potassium channel activators. II.

Baragatti B, Biagi G, Calderone V, Giorgi I, Livi O, Martinotti E, Scartoni V.

Dipartimento di Scienze Farmaceutiche, Universita di Pisa, Italy.

This paper reports the synthesis and pharmacological evaluation of a series of 5-substituted-triazolyl benzotriazoles (2a-f) and the corresponding series of 5-substituted-triazolyl-benzimidazolones (6a-f), as potential activators of the big-conductance calcium-activated potassium channels (BK(Ca)). The synthesis and structure demonstration of the stock compounds of the two series have been described in our previous works, as well as the common starting compounds 4-carboxamido-5-(4-substituted-2amino-anilino)-1,2,3-triazoles (1a-f). The triazolyl-benzotriazoles were obtained by diazotization, while the triazolyl-benzimidazolones were obtained by thermal intramolecular cyclization of ethoxycarbonylamino derivatives or directly with phosgene. Benzimidazolone compounds generally showed little effect whilst the compounds with a benzotriazole ring showed full efficacy, with vasorelaxing properties and potency parameters a little lower than that of the reference compound NS 1619. These effects were significantly reduced by an increased membrane depolarization. This depolarization-sensitive response is in agreement with the pharmacodynamic hypothesis of activation of potassium channels.

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